CANADA

National Energy Board

Reasons for Decision

Dartmouth Power Associates Limited Partnership

GH-9-90

May 1991

Gas Exports

National Energy Board

Reasons for Decision

In the Matter of

Dartmouth Power Associates Limited Partnership

Application Under Part VI of
the *National Energy Board Act*
for a Licence to Export Natural Gas

GH-9-90

May 1991

Cat. No. NE 22-1/1991-9E
ISBN 0-662-18937-x

This report is published separately
in both official languages.

Copies are available on request from:

Regulatory Support Office
National Energy Board
473 Albert Street
Ottawa, Canada
K1A 0E5
(613) 998-7204

Printed in Canada

Ce rapport est publié séparément
dans les deux langues officielles.

Exemplaires disponibles auprès du:

Bureau du soutien de la réglementation
Office national de l'énergie
473, rue Albert
Ottawa (Canada)
K1A 0E5
(613) 998-7204

Imprimé au Canada

Recital and Appearances

IN THE MATTER OF the *National Energy Board Act* and the Regulations made thereunder;

AND IN THE MATTER OF an Application by Dartmouth Power Associates Limited Partnership, by its agent Brymore Energy Ltd. for a licence under Part VI of the *National Energy Board Act* to export natural gas.

HEARD at Ottawa, Ontario on 19 and 20 February 1991.

BEFORE:

K.W. Vollman	Presiding Member
R.B. Horner	Member
R. Illing	Member

APPEARANCES:

D.C. Edie	Dartmouth Power Associates Limited Partnership
J.H. Farrell H. Soudek	Consumers' Gas Company Ltd., The
V.Z. Landry	Pan-Alberta Gas Ltd.
M. Grant	ProGas Limited
M. Forster	TransCanada PipeLines Limited
M.J. Samuel	Western Gas Marketing Limited
P. McNutt, Q.C.	Province of New Brunswick
J. Robitaille	Procureur général du Québec
J. Syme	National Energy Board

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Appendix I

Abbreviations

Act	the *National Energy Board Act*
AERCB	Alberta Energy Resources Conservation Board
AFC	Adjusted Fuel Cost
Algonquin	Algonquin Gas Transmission Company
B.C.	British Columbia
BCEMPR	British Columbia Ministry of Energy, Mines and Petroleum Resources
Bcf	billion cubic feet
Board, NEB	National Energy Board
Brymore	Brymore Energy Limited
CNRL	Canadian Natural Resources Limited
Columbia	Columbia Gas Development of Canada Ltd.
ComElectric	Commonwealth Electric Company
ComEnergy	Commonwealth Energy Systems, Inc.
Consumers'	The Consumers' Gas Company Ltd.
Dartmouth Power	Dartmouth Power Associates Limited Partnership by its agent Brymore Energy Ltd.
DCQ	daily contract quantity
EARP Order	*Environmental Assessment and Review Process Guidelines Order*
EIA	Export Impact Assessment
Excel	Excel Energy Inc.
FERC	(U.S.) Federal Energy Regulatory Commission
IPP	independent power production facility
Iroquois	Iroquois Gas Transmission System
m^3	cubic metres
Mcf	thousand cubic feet
MMcf	million cubic feet
MW	megawatts

MW.h	megawatt-hour(s)
NEPEX	New England Power Exchange
NEPOOL	New England Power Pool
New Brunswick	Department of Natural Resources and Energy, Office of the Attorney General, Province of New Brunswick
NOVA	NOVA Corporation of Alberta
NUG	non-utility generators
Part VI Regulations	*National Energy Board Part VI Regulations*
Remington	Remington Energy Ltd.
Tennessee	Tennessee Gas Pipeline Company
TransCanada	TransCanada PipeLines Limited
U.S.	United States of America
Westcoast	Westcoast Energy Inc.

Chapter 1

The Application

By its application dated 18 September 1990, as amended, Dartmouth Power Associates Limited Partnership ("Dartmouth Power") by its agent Brymore Energy Ltd. ("Brymore") sought, pursuant to Part VI of the *National Energy Board Act* ("the Act"), a new natural gas export licence with the following terms and conditions:

Term	-	1 November 1992 to 31 October 2012
Point of Export	-	Iroquois, Ontario
Maximum Daily Quantity	-	400.9 10^3m^3 (14.152 MMcf)
Maximum Annual Quantity	-	146.4 10^6m^3 (5.17 Bcf)
Maximum Term Quantity	-	2.93 10^9m^3 (103.43 Bcf)
Tolerances	-	10 percent per day and 2 percent per year.

The proposed export volumes would be produced within the provinces of Alberta and British Columbia and within the Yukon from existing and future reserves controlled by Canadian Natural Resources Limited ("CNRL"), Columbia Gas Development of Canada Ltd. ("Columbia"), Excel Energy Inc. ("Excel") and Remington Energy Ltd. ("Remington"). The gas supplied by Columbia, Excel and Remington would be sold to Dartmouth Power at the inlet to the pipeline system of NOVA Corporation of Alberta ("NOVA"), while the ownership of the CNRL gas would pass to Dartmouth Power at Empress, Alberta.

The gas from the Yukon would be transported to the Yukon-British Columbia ("B.C.") border and through B.C. on the pipeline system of Westcoast Energy Inc. ("Westcoast") to Fort Nelson for processing. From this point, the Yukon gas as well as all B.C. gas would be shipped via Westcoast to the Alberta/B.C. border and into the NOVA system. CNRL gas would be transported by NOVA pursuant to its agreement, while all other gas would be transported by NOVA pursuant to its agreement with Dartmouth Power, to the point of interconnection with the system of TransCanada PipeLines Limited ("TransCanada") at Empress, Alberta. The gas would then travel through TransCanada's system to the international border near Iroquois, Ontario. In the U.S., the gas would be transported on the pipeline systems of Iroquois Gas Transmission System ("Iroquois"), Tennessee Gas Pipeline Company ("Tennessee") and Algonquin Gas Transmission Company ("Algonquin") for delivery to Dartmouth, Massachusetts.

The proposed export volumes would be used to fuel a new gas-fired combined-cycle independent power production facility ("IPP") to be located in Dartmouth, Massachusetts and owned by Dartmouth Power. The plant, which is currently under construction and is expected to begin commercial operation by the second quarter of 1992, is designed to produce 67.6 MW of electricity which would be sold to Commonwealth Electric Company ("ComElectric").

Chapter 2

Reasons for Decision

2.1 Market-Based Procedure

The National Energy Board ("the Board"), in considering an export application, must take into account the requirements of section 118 of the Act which requires that the Board have regard to all considerations that appear to it to be relevant. In particular, the Board must satisfy itself that the quantity of gas to be exported does not exceed the surplus remaining after due allowance has been made for reasonably foreseeable Canadian requirements, taking account of trends in discovery.

To comply with the requirements of section 118 of the Act, the Board utilizes its Market-Based Procedure.

The Market-Based Procedure includes consideration of the following:

- complaints, if any, under the complaints procedure;
- an export impact assessment ("EIA"); and
- any other factors that the Board considers relevant to its determination of the public interest.

2.1.1 Complaints Procedure

The complaints procedure gives Canadian gas users an opportunity to object to an export proposal on the ground that they have not had an opportunity to obtain supplies of gas under contract on terms and conditions, including price, similar to those contained in the export proposal.

The Board notes that no complaints were received with respect to the Dartmouth Power export proposal.

2.1.2 Export Impact Assessment

The purpose of the EIA is to assist the Board in determining whether a proposed export is likely to cause Canadians difficulty in meeting their future energy requirements at fair market prices. Applicants have the option of using the Board's EIA or of preparing and submitting their own EIA as a basis for arguing whether the proposed exports would result in adjustment difficulties in Canadian energy markets.

Dartmouth Power elected to rely on the Board's most recent EIA. Based on that EIA, the Board has concluded that the applied-for export volumes would have little impact on Canadian production, consumption and prices of natural gas and Canadian energy users would not have any difficulty in meeting their future energy requirements as a result of the proposed export.

2.1.3 Other Factors Relevant to the Public Interest

In addition to using the complaints procedure and the EIA to ascertain whether gas proposed to be exported is surplus, the Board continues, as required by section 118 of the Act, to have regard to all factors it considers relevant in determining whether a proposed export is in the public interest.

In general, these factors can be placed into two categories: a) gas supply and, b) market, commercial arrangements and regulatory status. This listing of factors the Board may regard as relevant is illustrative rather than exhaustive. In making its determination, the Board relies heavily on information filed by export licence applicants in accordance with the *National Energy Board Part VI Regulations* ("Part VI Regulations"). This information is used to assess whether an export proposal is in the public interest, and the onus is on the applicant to ensure that the filed material is such as to

persuade the Board that its project has substance and is at a sufficiently advanced stage of completion to warrant the issuance of a licence.

The Board conducts a review of the applicant's gas supply arrangements to assist it in determining whether the proposed export is in the public interest. In its assessment of gas supply, the Board examines the adequacy of both reserves and productive capacity to support the applied-for exports.

The applicant provided estimates of remaining established reserves for those fields from which it intends to produce gas for the proposed export. The Board conducted geological and engineering analyses of the applicant's gas supply in order to prepare its own estimate of the applicant's marketable gas reserves.

In its evaluation of gas reserves, the Board made use of its gas reserves database, which is maintained on an ongoing basis. The evaluation of gas reserves includes a nomenclature check for correlation purposes, volumetric studies of new pools, reexamination of developing pools and performance analysis of producing pools. A review and assessment of the ownership and contractual status of all pools included in the application were also conducted.

The Board's estimate of reserves, along with basic deliverability data for each of the pools for which estimates of reserves were submitted, were used in preparing productive capacity projections. Productive capacity projections are generally adjusted to reflect an applicant's expected requirements for gas. The adjusted productive capacity is the estimated productive capacity at any point in time, carrying forward for future use the productive capacity resulting from an earlier excess of productive capacity over production. The requirements shown in the productive capacity figure are based on a load factor of 100 percent and may therefore somewhat overstate the applicant's actual supply requirements. To the extent that a lower load factor were to be experienced, productive capacity would be sustained beyond the time the Board's analysis indicates.

2.1.3.1 Gas Supply

2.1.3.1.1 Supply Contracts

Dartmouth Power has executed 20-year gas purchase agreements with four producers, namely; CNRL, Columbia, Excel, and Remington.

Under the provisions of these agreements, each of the producers has initially dedicated specific reserves and has undertaken to dedicate additional reserves over the term of the agreement, if required, to satisfy their supply obligations. The producers also have the right to substitute alternate reserves for any dedicated reserves; however, each producer has warranted that it will deliver sufficient volumes of gas to satisfy its contractual obligations. Further, the producers are required to provide compensation to Dartmouth Power for any incremental costs incurred in the event of failure to deliver the volumes requested.

Columbia's gas purchase agreement differs somewhat from the other producers' agreements, in that Columbia may elect to reduce its daily contract quantity ("DCQ") once during each five-year period over the term of the agreement. The stated purpose of this contractual provision is to protect Columbia should deliverability from its dedicated reserves be insufficient to meet its DCQ. The Consumers' Gas Company Ltd. ("Consumers' ") noted that Columbia could theoretically reduce its DCQ to zero and therefore that Columbia is not contractually obliged to deliver its contracted volume for the full 20-year term. In response, Columbia acknowledged it could reduce its DCQ to zero, but stated it was improbable it would do so. Dartmouth Power testified that, in the event Columbia elected to reduce the DCQ to zero, 62.3 10^3m^3 (2200 Mcf) per day of the 85 10^3m^3 (3000 Mcf) per day contracted with Columbia could be made up by purchasing fuel gas from TransCanada in combination with the utilization of the full contracted volumes from the other three producers. Dartmouth Power also pointed out that, since Columbia must provide two years written notice before reducing its DCQ, ample time would be available to find an alternate supply.

The agreements between Dartmouth Power and the four producers are discussed further in section 2.1.3.2.3 of these Reasons.

2.1.3.1.2 Reserves

As shown in Table 2-1, Dartmouth Power's estimate of reserves is lower than the applied-for volume by approximately 19 percent. The Board's estimate of reserves is 12 percent less than that of Dartmouth Power's and 29 percent less than the applied-for volume. In both cases the estimates of reserves reflect those reserves which are currently dedicated by the four producers noted above. Of these four producers, only Excel has dedicated sufficient reserves to satisfy its contractual commitment over the term of the proposed licence, whereas the currently dedicated reserves of the remaining producers are insufficient to satisfy their share of the applied-for volume.

Table 2-1

COMPARISON OF ESTIMATES OF DARTMOUTH POWER'S REMAINING ESTABLISHED GAS RESERVES WITH THE APPLIED-FOR VOLUME 10^6m^3 (Bcf)

DARTMOUTH POWER[1]	NEB[2]	APPLIED-FOR VOLUME
2 372 (84)	2 087 (74)	2 930 (103)

1. as of 1 November 1992
2. as of 31 December 1990 (from 31 December 1989 data less production in 1990). The Board's estimate of remaining reserves would be a minimum of 175 10^6m^3 less than shown if further adjusted for estimated production for the period 1 January 1991 to 1 November 1992. The Board estimate of reserves would then be 20 percent less than Dartmouth Power's and 35 percent less than the applied-for volume.

The differences in the overall estimates of reserves are due to differences in area assignments, recovery factors and the interpretation of net pay. The Board's estimates of reserves for CNRL and Columbia are similar to the Applicant's. Most of the difference between the Board's and the Applicant's estimates of reserves are related to the pools dedicated by Excel and Remington.

The differences in estimates of reserves for Excel occur primarily with respect to area assignments for pools in the Rainbow and Shekilie Fields in Alberta and recovery factor and estimates of net pay for pools in the Tommy Lakes Field in British Columbia. In the Rainbow/Shekilie region within the Keg River Formation, the Board generally uses pool areas consistent with small pinnacle reefs, typically less than 64 ha. The Board considered the evidence submitted by Excel and adjusted its estimates of pool areas upward somewhat but not to the extent suggested by Excel. In the Tommy Lakes area, the Board used an average net pay estimate generated from mapping of the large Halfway Formation pool, while Excel used an arithmetic average net pay based on the wells drilled to date. The Board also adopted the British Columbia Ministry of Energy, Mines and Petroleum Resources' ("BCEMPR") recovery factor which reflects this pool's low initial pressures and anticipated water production problems. The Board was not satisfied based on the evidence submitted by Excel that a higher recovery factor was warranted.

The main difference in estimates of reserves for Remington was in area assignments for the Doe Creek Kiskatinaw Pool. The Board recognized only those portions of the pool that are under lands controlled by Remington. Remington indicated that the southwest portion of the pool, which was included in its estimate of reserves, was not under its control and could be drilled by the land owner. However, Remington did not believe this would occur due to limited access resulting from the local topography. The Board recognizes that for this reason there is an upside to its estimate of reserves given that the southwest portion of the pool may not be drilled by the land owner.

Dartmouth Power's gas reserves are contained in 32 pools in Alberta, one in British Columbia and one in the Yukon Territories. The pools are found mainly in Lower Cretaceous, Mississippian and Devonian horizons. Nineteen pools are less than 100 10^6m^3 (3.5 Bcf) in size, while six pools had initial reserves of more than 1000 10^6m^3 (35 Bcf), as estimated by the Board. Eight pools, all in Alberta, were on production by 31 December 1990.

In summary, the Board's estimate of reserves is lower than that of Dartmouth Power. Both the Board's and Dartmouth Power's estimates are lower than the applied-for volume.

2.1.3.1.3 Productive Capacity

A comparison of Dartmouth Power's and the Board's projections of productive capacity with

Dartmouth Power's requirements, including fuel and shrinkage, is shown in Figure 2-1.

In aggregate Dartmouth Power's gas supply, as projected by both itself and the Board, is adequate to meet the requirements of the proposed export for the initial seven years of the proposed term. Throughout the remainder of the proposed term Dartmouth Power is expected to experience increasing shortfalls in supply from its currently dedicated reserves. Of the four producers, only Excel submitted a productive capacity projection which showed that it could meet its DCQ throughout the proposed term, whereas the other producers indicated adequate productive capacity for only six to nine years.

Dartmouth Power acknowledged that its project is not underpinned by firm supply for the entire export term; however, it stated that projected shortfalls in productive capacity could be remedied by the producers dedicating additional reserves and a backstopping arrangement with Brymore.

The producers submitted that, while each had an adequate corporate gas supply to meet the export requirements, it was not economically prudent to tie-up undedicated lands on a long-term basis. In support of this submission, some of the producers provided information ranging from a corporate supply/demand projection to information concerning current production, drilling and land holdings. Dartmouth Power stated that it was satisfied with the contractual commitments made by the producers.

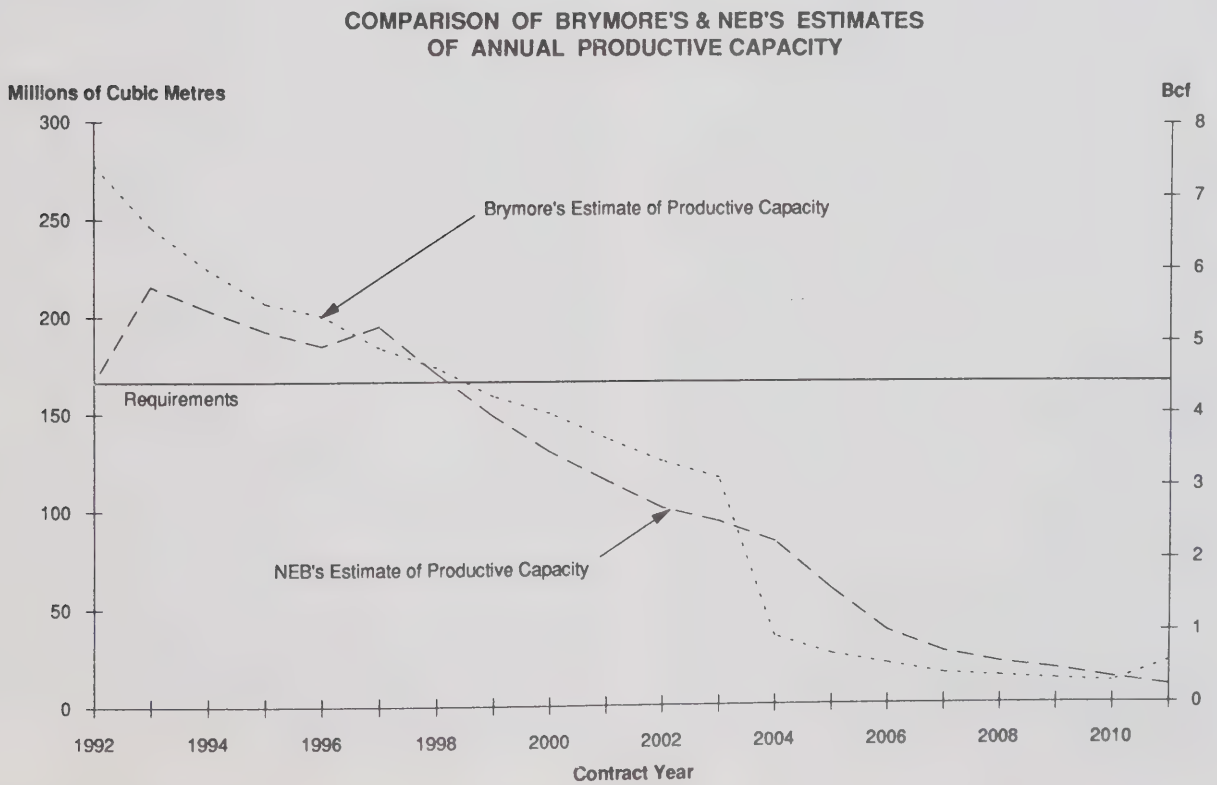
2.1.3.2 Market, Commercial Arrangements and Regulatory Status

2.1.3.2.1 Market

The export volumes would be used to fuel a 67.6 MW IPP facility currently under construction on a five acre site in Dartmouth, Massachusetts. The project involves a capital outlay of $Cdn 83.3 million. Financing for the facility has been finalized with amortization periods ranging from 13.5 to 18 years.

During the interim period of April through October 1992, from the scheduled start-up of commercial operation until transportation facilities for the proposed export are expected to be available, Dartmouth Power plans to burn Canadian-source

Figure 2-1



gas supplied pursuant to a firm gas contract with New England Power Company. Should New England Power Company's Canadian gas supply not be available as a result of delays in the TransCanada pipeline expansion or Iroquois pipeline construction, Dartmouth Power would use Oklahoma-sourced gas as an interim supply. These interim supply contracts would terminate on the earlier of availability of service for Dartmouth Power on Iroquois or November 1994. Dartmouth Power stated that it is its intention to supply this project entirely with Canadian gas and that, other than *force majeure*, it could not envisage any circumstances where any other sources of supply would be used.

Dartmouth Power expects the gas to be taken by the generating facility pursuant to the four gas purchase agreements at a load factor in excess of 90 percent. This estimate was arrived at by taking into account the plant's expected efficiency based on historical operating data for non-utility combined cycle gas-fired plants.

ComElectric, the power purchaser, is a subsidiary of Commonwealth Energy Systems, Inc. ("ComEnergy"), a public utility holding company located in Cambridge, Massachusetts. ComEnergy's retail electric companies, ComElectric and Cambridge Electric Light Co., serve a total of 342,000 customers in 41 Massachusetts communities and are directly interconnected with other northeast utilities. The combined service territories of the retail companies cover 1,112 square miles, with a total population of 560,000. The largest cities served are New Bedford and Cambridge. ComElectric projects that peak load will grow at 2.7 percent per year over the next fifteen years or about 2.3 percent if conservation and load management programs are successful.

ComElectric is a member of the New England Power Pool ("NEPOOL"). NEPOOL coordinates the planning and operation of the generation and bulk transmission facilities of its 93 members. The IPP will be dispatched by the New England Power Exchange ("NEPEX"), the central dispatch arm of NEPOOL. The facility is expected to provide ComElectric with approximately 504 726 MW.h of electricity annually. The output will be available to meet the needs of ComElectric's customers as well as those of the other NEPOOL participants - more than 5 million people. NEPOOL projects an annual electric power growth rate of 2.3 percent through to the year 2010.

Dartmouth Power offered the following reasons in support of its stated need for a 20-year licence term:

- precedent transportation agreements are in place for firm service for a period of 20 years;
- a 25-year power sales agreement has been executed;
- bank financing for terms ranging from 13.5 to 18 years has been arranged;
- a 20-year licence would enable Dartmouth Power to attract and hold equity investment on an on-going basis; and
- each of the gas suppliers has undertaken to find and deliver its DCQ during the full 20-year term.

2.1.3.2.2 Transportation

The proposed export volumes, including Yukon and B.C. gas which would be transmitted via the Westcoast system to the NOVA system at the Alberta/B.C. border, would be transported to the Alberta/Saskatchewan border, at Empress, on the NOVA system. TransCanada would receive the gas at Empress and deliver it to the international border at Iroquois, Ontario. From the border, Iroquois would transport the gas to Schoharie County, New York where it would be transferred to the facilities of Tennessee. The gas would then be transported by Tennessee to the interconnect with Algonquin at Mendon, Massachusetts. Algonquin would transport the gas to the Dartmouth facility.

Within Alberta, beginning on 1 November 1992, transportation of the Columbia, Excel and Remington volumes would be provided pursuant to a 20-year firm service agreement dated 1 September 1990 between NOVA and Dartmouth Power. New facilities would be required to transport the Dartmouth Power volumes. The CNRL volumes would be transported under an existing renewable firm service agreement between CNRL and NOVA.

Dartmouth Power has executed a precedent agreement dated 17 September 1990 with TransCanada for firm service for a 20-year period beginning 1 November 1992. A performance agreement on financial assurances between Dartmouth Power and TransCanada was signed on 8 February 1991. TransCanada will be making application to the Board at a later date for the facilities required to transport the gas for the Dartmouth Power project as well as for other projects.

In the U.S., firm transportation service on Iroquois was secured by Dartmouth Power for 20 years under a Precedent Agreement dated 11 September 1990. The exported volumes would be transported on Iroquois from the international border to the interconnection with Tennessee in Schoharie County, New York.

Tennessee would, in turn, transport the volumes to the interconnection with Algonquin at Mendon, Massachusetts pursuant to its Precedent Agreement with Dartmouth Power dated 14 September 1990 which provides for firm service for a 20-year term. Dartmouth Power stated that, as a result of the proposed expansion of the TransCanada pipeline and construction of the Iroquois facilities, the Tennessee pipeline system would require expansion between the interconnect with Iroquois at Schoharie County, New York and the interconnect with Algonquin at Mendon, Massachusetts. Tennessee advised Dartmouth Power that it expects to file an application with the U.S. Federal Energy Regulatory Commission ("FERC") in late April or early May 1991. Tennessee plans to link the timing and capacity of its proposed expansion program with the construction of the Iroquois pipeline and therefore expects the additional capacity required on its system to be in place when the Iroquois capacity is in place.

Finally, Algonquin would transport the gas from Mendon, Massachusetts to the Dartmouth Power facility under a Precedent Agreement for firm service dated 16 December 1988, as amended on 27 February 1990, between Dartmouth Power and Algonquin. The agreement stipulates the initial receipt point on the Algonquin system as Providence, Rhode Island in order to accommodate Dartmouth Power's possible need for U.S.-sourced interim fuel supply. The agreement will be amended to reflect the Mendon, Massachusetts receipt point prior to 1 November 1992, the date of availability of the proposed export volumes. The facilities required by Algonquin to transport gas for the Dartmouth Power project and other projects are the subject of an application filed with the FERC on 16 December 1988. Approval of these facilities is expected in the second quarter of 1991.

2.1.3.2.3 Gas Purchase Agreements

Dartmouth Power has entered into 20-year gas purchase agreements with four suppliers - namely CNRL, Columbia, Excel and Remington.

The term of each agreement is to begin on the later of:

- 1 November 1992; or
- the date all facilities necessary for the transmission of the gas to be exported and all other gas supply agreements in respect of the IPP are in place and ready to begin transmission of the gas.

Each of the agreements includes several conditions precedent. By 31 December 1990, Dartmouth Power was to supply the producers with proof of project financing, acceptance of the gas purchase contracts by the lender, executed purchase agreements for the total volume required, executed transportation precedent agreements and, in the case of Columbia, financial assurances required by the transporters. The facility must be under construction by 31 December 1991. All regulatory authorizations are to be in place by 31 December 1992 and Dartmouth Power must nominate for and take delivery of the gas on or before 31 December 1993.

Each of the four agreements contains an identical commodity pricing formula by which the price is to be determined at the inlet to the NOVA system. The formula is based on a base price of $U.S. 1.348/GJ ($U.S. 1.452/MMBtu) with an escalation provision, entitled Adjusted Fuel Cost ("AFC"), tied to current gas prices in Alberta and the U.S. Northeast weighted as follows: 25% of the sum of Tennessee's CD-6 Commodity and Gas Rates, 25% of Algonquin's F-1 Commodity Total Rate as specified in their FERC Gas Tariffs and 50% of the Alberta Average Market Price.

The price is to be calculated monthly by multiplying the base price by the quotient obtained by dividing the current month's AFC by the average base index of $U.S. 1.863/GJ ($U.S. 2.006/MMBtu) which reflects the average value of the AFC for the year 1989. Based on a sample calculation of the pricing formula provided by Dartmouth Power, the price at Empress for the month of December 1990 would have been $U.S. 1.816/GJ ($U.S. 1.955/MMBtu).

Under each of the agreements, the suppliers have the option in each contract year to lower their DCQ if Dartmouth Power takes less than an average of 70 percent of its Annual Contract Quantity (called the Triggering Quantity) over the previous two years. In three of the four agreements, the maxi-

mum DCQ reduction allowable in any one year would be the daily equivalent of the difference between the Triggering Quantity and actual average takes over the previous two years. In the case of the Columbia agreement, the DCQ is obtained by dividing the average scheduled deliveries over the past two years by 0.7.

Other provisions which are unique to each contract are discussed below.

2.1.3.2.3.1 Canadian Natural Resources Limited

Pursuant to a Gas Purchase Agreement dated 14 June 1990 executed by Dartmouth Power and CNRL and an Amending Agreement dated 31 August 1990, CNRL agreed to supply Dartmouth Power with up to 141.6 10^3m^3 (5,000 Mcf) of gas per day for a term of 20 years. Ownership of the gas will pass from CNRL to Dartmouth Power at the interconnect between the NOVA system and the TransCanada system at Empress, Alberta.

Dartmouth Power must nominate for daily deliveries under this contract of not less than 31 percent of the IPP's total requirement for that particular day.

The contract provides for price renegotiation every fifth contract year with the new pricing structure conditioned on Dartmouth Power renegotiating similar pricing provisions with ComElectric. Failure of all parties to agree would result in the pricing structure remaining as it was prior to negotiation for the next five years. Dartmouth Power stated that the price escalator was designed to provide for a gas-based market sensitive price which would preclude the need for price renegotiation. Arbitration is available in the event that any of the components of the AFC cease to be available and an alternative method cannot be agreed upon.

Because CNRL is providing its own transportation on the NOVA system to Empress, this contract contains a provision requiring payment by Dartmouth Power of all transportation charges incurred by CNRL on that system. All precedent conditions outlined in the general description of the four contracts must be satisfied or this contract can be terminated upon three months written notice.

2.1.3.2.3.2 Columbia Gas Development of Canada Ltd.

Pursuant to a Gas Purchase Agreement dated 14 June 1990 executed by Dartmouth Power and Columbia and an Amending Agreement dated 31 August 1990, Columbia agreed to supply Dartmouth Power with up to 85 10^3m^3 (3,000 Mcf) of gas per day for a term of 20 years. Ownership of the gas will pass from Columbia to Dartmouth Power at the inlet of the NOVA system. Dartmouth Power agrees to maintain the volumes it nominates from Columbia in each contract year to within one percent of Columbia's proportion of the facility's total requirements. In any given month Columbia's proportion is to be determined by dividing CNRL, Remington and Excel's average DCQ by the average aggregate daily nominations made to suppliers in that month.

Price renegotiation is available in this contract every fifth year or anytime any component of the AFC ceases to be available. Failure to agree on a new pricing formula could result, at Columbia's option, in the price being equal to the Alberta Average Market Price for each month. Should Columbia exercise this option, either party may terminate the agreement on two years written notice. Unlike the other three agreements, there is no arbitration provision included in this agreement.

All precedent conditions described in the general descriptions of the four contracts must be satisfied or the contract can be terminated upon written notice of three months or within such longer time frame specified in the notice.

2.1.3.2.3.3 Excel Energy Inc.

Dartmouth Power has an executed Gas Purchase Agreement dated 7 May 1990, and an Amending Agreement dated 11 July 1990, with Excel for delivery of 56.7 10^3m^3 (2,000 Mcf) per day at the inlet to the NOVA system.

This agreement contains price renegotiation and arbitration provisions which are identical to those described earlier for the CNRL agreement. All conditions precedent described in the general description of the four contracts must be satisfied or either party may terminate the agreement upon three months written notice.

2.1.3.2.3.4 Remington Energy Ltd.

Under a Gas Purchase Agreement executed on 4 June 1990 and an Amending Agreement dated 31 August 1990, as amended, Remington will deliver 170 10^3m^3 (6,000 Mcf) per day of gas to Dartmouth Power at the inlet to the NOVA system.

This agreement contains price renegotiation and arbitration provisions which are identical to those described earlier for the CNRL agreement. All conditions precedent described in the general description of the four agreements must be satisfied or either party may terminate the agreement upon 30 days written notice.

2.1.3.2.4 Power Purchase Agreement

The proposed sale of electricity from the Dartmouth IPP will be pursuant to a Power Purchase Agreement dated 5 September 1989 and an Amending Agreement dated 3 August 1990, between ComElectric and Dartmouth Power. The agreement has a 25-year term which will begin on the initial in-service date of the IPP. The plant will be dispatchable, with NEPEX controlling the actual rate of dispatch. Dartmouth Power expects the plant to be dispatched as a base-load facility due to the relatively high rate of plant efficiency and incremental dispatch cost criteria.

The price for electricity purchased includes monthly capacity and energy charges. The capacity charge consists of the sum of fixed investment cost, pipeline demand costs and a capacity cost. The capacity cost includes a bonus/penalty provision dependent upon unit availability. The energy charge comprises the delivered energy and variable fuel supply and fuel transportation costs. The fixed and commodity transportation costs will be paid by ComElectric whether or not the facility is dispatched. The pricing formula contained within the agreement cannot be changed without approval of the FERC.

The Dartmouth plant will be connected to ComElectric through transmission facilities owned by Dartmouth Power. Should Dartmouth Power expand the plant or continue to operate the plant beyond the agreement's term, it is required to offer the electricity to ComElectric on substantially similar business terms as those offered to any other purchaser.

2.1.3.2.5 Regulatory Status

Dartmouth Power applied to the U.S. Department of Energy/Office of Fossil Energy on 10 September 1990 for import authorization for a period of 20 years. Dartmouth Power also applied to the province of Alberta's Energy Resources Conservation Board ("AERCB") for an energy removal permit with a term of thirteen years and four months. Dartmouth Power indicated that it would be filing an application with the BCEMPR shortly with respect to reserves located within B.C. Dartmouth Power anticipated that all removal authorizations would be received within the next few months and would be filed with the Board at that time.

2.2 Views of Intervenors

2.2.1 Province of New Brunswick

The Province of New Brunswick stated that it had no direct opposition to the application to export gas to the Dartmouth Power facility. The Province participated in the hearing to apprise the Board of its intention to seek and vigorously pursue equal access to Canadian gas. The Province expressed its concern about the cumulative effect of natural gas exports from Canada, particularly to the Northeastern United States. New Brunswick, in its recently adopted energy policy, outlined the reasoning behind its desire to gain access to natural gas. Its reasons were as follows:

- access to a secure primary source of energy in order to decrease the province's dependence on foreign oil;
- access to fuel switching opportunities which would provide fuel price competition;
- opportunity to benefit from the use of an environmentally benign fossil fuel; and
- opportunity to benefit from high-efficiency electrical generation through the use of gas-fired combined-cycle technologies.

New Brunswick pointed out that the extension of gas transmission facilities to Vancouver Island had been approved. New Brunswick stated that at a meeting of provincial and territorial energy ministers, it was recognized that a pipeline extension to Atlantic Canada was an issue of national priority within the context of a national transmission facility which required strong federal support.

The Province also stated that, although it was willing to do its part in order to meet global environmental goals, it was somewhat limited in its ability to reduce CO_2 emissions without access to natural gas. The Province outlined the environmental activities contemplated if natural gas were available. New Brunswick stated that due to the uncertainties surrounding access to natural gas from the Atlantic offshore, access to Western Canadian gas was more likely within the framework of its energy policy to the year 2005.

2.2.2 The Consumers' Gas Company Ltd.

Consumers' was the only intervenor which commented on Dartmouth Power's gas supply. Consumers' stated that it believed an applicant for a gas export licence should be required to demonstrate a firm gas supply for the entire term of the applied-for licence. In this regard, Consumers' was concerned that Columbia could reduce its DCQ to zero and therefore was not contractually obliged to maintain deliverability to deliver its contracted volume for the entire 20-year term of its gas purchase agreement with Dartmouth Power. Consumers' did however take some assurance from the fact that most of Columbia's DCQ could, if necessary, be replaced by purchasing fuel gas from TransCanada.

Consumers' expressed the opinion that, in the case of an application to export natural gas for the production of electricity, applicants should demonstrate that the market is robust and that the gas would flow at high load factors. In keeping with this position, Consumers' brought a motion in which it requested the Board to compel Dartmouth Power to provide market information that would permit Consumers' to test Dartmouth Power's assertion that the plant would operate at a 90 percent load factor. In response, Dartmouth Power filed five-year forecasts of capacity and annual energy output from facilities owned by ComElectric and from generating units in which ComElectric has an ownership share. However, Consumers' wished to compare the dispatch of the Dartmouth Power facility with the generating units of other NEPOOL members and other non-utility generators ("NUG"). Witnesses for the applicant stated this information was not available from NEPOOL and was only provided to members for units in which a pool member had an ownership position. They stated that this information from NUGs was proprietary in nature. Consumers' was advised by the applicant that NEPEX's dispatch of the Dartmouth Power facility would be based on a combination of individual plant efficiency and fuel cost.

ComElectric expressed the view that Dartmouth Power's main competition for dispatch would be from oil-fired generating units operating in New England. It stated that one of the factors used to determine the 90 percent load factor of the Dartmouth Power facility was a comparison with ComElectric's Canal Unit I plant, which, as the most efficient oil-fired electrical generating unit in the world, has a load factor of 86 percent. ComElectric explained that, because the gas-fired generating unit to be installed at Dartmouth had a higher efficiency rating than the Canal Unit I and because it would be burning a lower cost fuel, the expectation was that the Dartmouth Power facility would run at a higher load factor than the Canal Unit I plant. Other reasons advanced by the applicant for its claim of a 90 percent load factor were that, as a part of NEPOOL, the plant was provided with a large, stable and diversified market; that there was growth demand for electricity in New England; and, as an IPP, there would be no steam bled-off thus allowing for more efficient electricity production.

Consumers' questioned the continued high-efficiency and expected 90 percent load factor of the Dartmouth Power facility over the life of the licence given the probable advances in power generating technology. In response, Dartmouth Power stated that if more efficient technology were developed, the plant would be retrofitted and upgraded to take advantage of the new technology. In response to Consumers' concerns about the absence of load data beyond five years, ComElectric explained that based on its knowledge and experience, the unit would run after its first five years of operation at approximately the same load factor as the last three years of ComElectric's five year load forecast.

Upon completion of Dartmouth Power's evidence concerning markets, Consumers' elected not to proceed with its motion as Dartmouth Power had indicated that the information Consumers' was seeking simply did not exist. However, given the dearth of hard comparative data, Consumers' concerns regarding market and load factor were not dispelled. Consumers' stated it was not in a position to directly refute the Dartmouth Power/

ComElectric assertions concerning dispatch levels and therefore was not registering outright opposition to the export application. Consumers' expressed the hope that weaknesses in the evidence would be remedied by the time Dartmouth Power appears before the Board in the next TransCanada facilities application.

Consumers' urged the Board to make clear the fact that issuance of a licence did not give Dartmouth Power automatic entitlement to capacity on the TransCanada system. Consumers' asked the Board to set out the criteria it used in its assessment of export licence applications.

2.3 Environmental Screening

On 8 February 1990, the Minister of Energy, Mines and Resources, the Honourable Jake Epp, wrote to the Board requesting clarification on how it complied with the *Environmental Assessment and Review Process Guidelines Order* ("the EARP Order") in arriving at its decision to issue licences for the export of natural gas. In his response to the Minister, the Chairman of the Board advised that, in compliance with the EARP Order, the Board would be instituting a screening procedure to examine the potential environmental effects of each export proposal before the Board.

The purpose of the environmental screening is to enable the Board to reach one of the conclusions required by section 12 of the EARP Order. To that end, the Board held a written hearing, pursuant to Hearing Order GH-9-90, wherein it considered submissions from the applicant as well as submissions from all interested parties to GH-9-90.

Dartmouth Power filed with the Board environmental information concerning the potential environmental effects of the proposal and the social effects directly related to those environmental effects, including any effects that are external to Canadian territory.

Interested parties were served with the written submission of Dartmouth Power and were given an opportunity to provide their written views on the issues referred to in that submission. Dartmouth Power was then afforded an opportunity to reply to the written submissions from interested parties.

The Board has completed its environmental screening and has concluded that in respect of the export proposal of Dartmouth Power, the potentially adverse environmental effects and the social effects directly related thereto are insignificant or mitigable with known technology.

2.4 Views of the Board

The Board shares Consumers' concern that Columbia has the opportunity to reduce its DCQ (possibly to zero), during each five-year period of the proposed export term. However, the Board notes that this option is not available until the fifth year of the contract, and, like Consumers', observes that Columbia's portion of the gas supply can be largely replaced by purchasing fuel gas from TransCanada.

Dartmouth Power has initial dedicated reserves equivalent to about 14 years of requirements (including fuel and shrinkage) by its own estimate and somewhat less than 13 years by the Board's estimate. However, both the Board's and Dartmouth Power's projections of productive capacity indicate that requirements can be met for only the initial seven years of the proposed export. The Board agrees with Dartmouth Power that this projected shortfall could be remedied to some extent by the producers' corporate supplies and the backstopping arrangement with Brymore. The Board also takes some comfort from the fact that each of the four producers has warranted that they will supply all volumes required pursuant to their respective gas supply agreements. However, the Board is of the view that Dartmouth has not provided sufficient assurance that there will be adequate gas supply to meet Dartmouth Power's requirements over the full term of the proposed export.

The Board has examined whether there is a commercial necessity for a 20-year licence term. While the power purchase agreement is for a term of 25 years and the gas purchase and transportation precedent agreements cover a 20-year period, the Board notes that some of the associated contractual and commercial arrangements such as the project financing and the AERCB removal permit would have terms of less than 20 years. The Board also notes that obtaining a 20-year licence is not a condition of financing.

On balance, the Board is not satisfied that the evidence submitted by Dartmouth Power with regard to supply and the commercial necessity of the

applied-for licence term is adequate to support the issuance of a 20-year export licence.

The Board is satisfied that the markets for the electricity to be produced by the IPP are secure and notes that ComElectric, with successful conservation and load management programs, and NEPOOL are projecting an annual peak load growth of 2.3 percent in the next 15 and 20 years respectively.

The Board has considered all of the evidence with respect to the dispatch level of the Dartmouth Power project and concludes that this facility will likely operate at a high load factor. In arriving at this conclusion, the Board has taken into account the comparisons made by ComElectric to its Canal Unit I plant. With regard to Consumers' assertion that future improvements in technology could affect the dispatch of the Dartmouth plant, the Board agrees that this is possible as it is with any industry, given the likelihood of future technological developments. However, in the absence of evidence to refute the applicant's claim of a high operating and dispatch level and given the fact that the evidence adduced supports this claim, the Board is satisfied with the applicant's projection of a high load factor.

The Board notes that all transportation arrangements in Alberta have been secured and that Dartmouth Power has signed a precedent agreement as well as an agreement of financial assurances with TransCanada for firm service for 20 years. As the shipper, Dartmouth Power is directly responsible for all demand charges on TransCanada. The Board also notes that Dartmouth Power is the shipper on NOVA for three of the four supply contracts and as such will also be directly responsible for that system's demand charges. In the case of the fourth supply contract, Dartmouth Power is contractually obligated to pay the NOVA demand charges. The Board notes that precedent agreements have been signed for 20 years of firm service with all U.S. transporters.

The Board is satisfied that all fixed costs of transportation in Canada will be recovered.

The Board notes that TransCanada supported the Dartmouth Power application as it felt it was in compliance with Part VI of the Act. TransCanada also confirmed that the Dartmouth Power project would be included in the 1992-93 facilities application to be filed with the Board following release of the GH-5-89 decision.

The Board is of the view that, since the pricing provisions in the gas contracts reflect both the average Alberta market price and the price of gas in Dartmouth Power's market area, and that renegotiation clauses are included, the contracts permit adjustments to reflect changing market conditions over the life of those contracts. Although Columbia can elect to decontract, the Board agrees with Dartmouth Power that, given the required two-year notification period, they will have sufficient lead-time to negotiate a contract with another supplier if necessary and to seek approval of the Board for these new supply arrangements pursuant to section 35 of the Part VI Regulations.

The Board is satisfied that the four gas sales contracts were negotiated at arm's length and that the producers endorsed the proposed export by virtue of having executed the contracts.

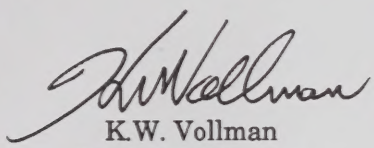
The Board notes that, notwithstanding New Brunswick's views with respect to gaining access to natural gas, it had no direct opposition to the Dartmouth Power application.

Finally, the Board understands the concerns expressed by Consumers' regarding the criteria used to examine Part VI applications. The Board wishes to assure Consumers' that it intends to review these criteria and will fully address its concerns at an early date.

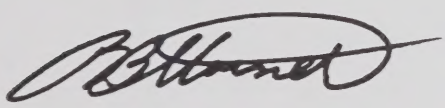
2.5 Disposition

The Board has decided to issue a gas export licence to Dartmouth Power, subject to the approval of the Governor in Council. Appendix 1 contains the terms and conditions of the licence, including a condition that the term of the licence shall commence on 1 November 1992 and shall end on 1 November 1994, unless exports have commenced under the licence on or before 1 November 1994, in which case the term would end on 31 October 2007.

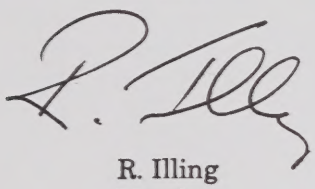
The foregoing chapters constitute our Decision and Reasons for Decision in respect of the application heard by the Board in the GH-9-90 proceedings.



K.W. Vollman
Presiding Member



R.B. Horner
Member



R. Illing
Member

Ottawa, Canada
May 1991

Appendix I

Terms and Conditions of the Licence to be Issued to Dartmouth Power Associates Limited Partnership

1. The term of this Licence shall commence on 1 November 1992 and shall end on 1 November 1994 unless exports commence hereunder on or before 1 November 1994, in which case the term will end on 31 October 2007.

2. Subject to condition 3, the quantity of gas that may be exported under the authority of this Licence shall not exceed:

   (a) 400 900 cubic metres in any one day;

   (b) 146 400 000 cubic metres in any consecutive twelve-month period ending on 31 October; or

   (c) 2 196 000 000 cubic metres during the term of this Licence.

3. (a) As a tolerance, the amount that Dartmouth Power may export in any 24-hour period under the authority of this Licence may exceed the daily limitation imposed in condition 2 by ten percent.

   (b) As a tolerance, the amount that Dartmouth Power may export in any consecutive twelve-month period under the authority of this Licence may exceed the annual limitation imposed in condition 2 by two percent.

4. Gas exported under the authority of this Licence shall be delivered to the point of export near Iroquois, Ontario.